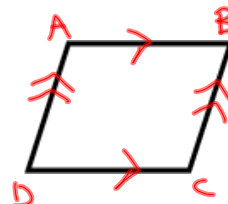
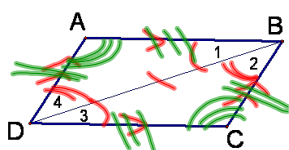


## 8-2 Parallelograms

Parallelogram-quadrilateral with both pairs of opposite sides parallel



$\square ABCD$



Given:  $\square ABCD$   
Prove:  $\triangle ABD \cong \triangle CDB$

- |  |  |
|--|--|
| <p>S.</p> <ol style="list-style-type: none"> <li>① <math>\square ABCD</math></li> <li>② <math>\overline{AB} \parallel \overline{CD}</math>; <math>\overline{AD} \parallel \overline{BC}</math></li> <li>③ <math>\overline{BD} \cong \overline{BD}</math></li> <li>④ <math>\angle 1 \cong \angle 3</math> <math>\angle 4 \cong \angle 2</math></li> <li>⑤ <math>\triangle ABD \cong \triangle CDB</math></li> </ol> | <p>R.</p> <ol style="list-style-type: none"> <li>① Given</li> <li>② def of <math>\square</math></li> <li>③ Refl.</li> <li>④ If <math>\parallel</math>, alt int <math>\angle s \cong</math></li> <li>⑤ ASA</li> </ol> |
|--|--|

Theorem 8.3-Opposite sides of a parallelogram are congruent



Theorem 8.4-Opposite angles of a parallelogram are congruent



Theorem 8.5-Consecutive angles of a parallelogram are supplementary

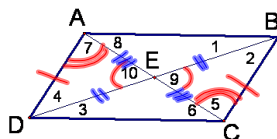


Theorem 8.6-If a parallelogram has one right angle, then it has four right angles.



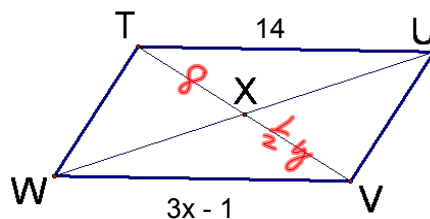
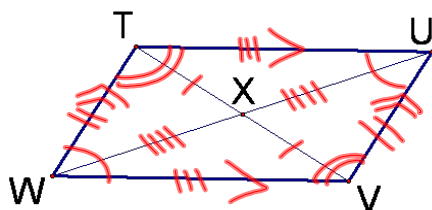
Theorem 8.7-Diagonals of a parallelogram bisect each other





Given:  $\square ABCD$   
Prove:  $\triangle AED \cong \triangle CEB$

Theorem 8.8-Each diagonal of a parallelogram separates it into two congruent triangles



$$\begin{aligned} TX &= 8 \\ XV &= .5y \end{aligned}$$

$$\begin{aligned} 8 &= \frac{1}{2}y \\ 16 &= y \end{aligned}$$

$$\begin{aligned} 3x - 1 &= 14 \\ 3x &= 15 \\ x &= 5 \end{aligned}$$

HW

p. 414-415

7-12, 16-31

Use  $\square JKLM$  to find each measure or value if  $JK = 2b + 3$  and  $JM = 3a$ .

7.  $m\angle MJK$

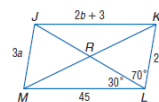
8.  $m\angle JML$

9.  $m\angle JKL$

10.  $m\angle KJL$

11.  $a$

12.  $b$



Complete each statement about  $\square ABCD$ .

Justify your answer.

16.  $\angle DAB \cong$  ?

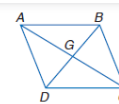
17.  $\angle ABD \cong$  ?

18.  $\overline{AB} \parallel$  ?

19.  $\overline{BC} \cong$  ?

20.  $\triangle ABD \cong$  ?

21.  $\angle ACD \cong$  ?



**ALGEBRA** Use  $\square MNPR$  to find each measure or value.

22.  $m\angle MNP$

23.  $m\angle NRP$

24.  $m\angle RNP$

25.  $m\angle RMN$

26.  $m\angle MQN$

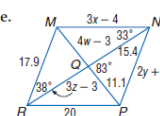
27.  $m\angle MQR$

28.  $x$

29.  $y$

30.  $w$

31.  $z$



Find the point where the diagonals intersect.